

Two new Heliothripinae (Thysanoptera) from the Transvaal

by

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The author is indebted to Professor J. C. Faure for the privilege of studying his South African material of the Heliothripinae, among which were the two new species described below, and of retaining the holotypes, allotypes, and a portion of the series of paratypes of each of the new ones.

Hercothrips helini sp. nov. (Fig. 1a).

Female (macropterous).—Length about 1.1 mm. (fully distended, about 1.3 mm.). Colour dark brown, darkest in abdomen and along sides of head and thorax, the head with extreme front and an adjoining area along eyes in front of posterior ocelli, yellow; femora about concolorous with body, yellow at base and at apex, the fore pair paler and more extensively yellow; fore tibiae largely yellow, with a brown area beyond basal fourth which extends forward along inner surface to near tip, the middle and hind tibiae darker, yellow at extreme base and in about apical third, the intermediate portion concolorous with femora; fore wings with two dark cross-bands, one occupying the second and third fourths and darker at either end, the other occupying the terminal sixth and darker in the ambient vein, the area between the dark bands, and also a narrower one occupying the third twelfth, nearly white, the basal sixth of wings pale but with indistinct light brown areas at extreme base and opposite tip of scale; antennae largely brown, segments I and II light brown, the latter segment yellowish just beyond base and apically III and IV dark brown and concolorous with body in their swollen portion, III with remainder light brown, IV with the narrowed basal and apical portions yellow. V whitish yellow in basal two-thirds, its apical portion and all of VI-VIII concolorous with body.

Head (when strictly horizontal) about 1.3 times as wide as long, about as broad across eyes as across cheeks, the latter broader opposite posterior margin of eyes, curved gently to eyes, and tapered to a very slight collar-like thickening at base; dorsal surface distinctly reticulate as usual, the reticles minutely wrinkled. *Eyes* typical, rounded, distinctly protruding anteriorly but only slightly so at sides, somewhat more than half the length of head, in one caustic-treated paratype with dorsal length 74 microns, dorsal width 46

microns, dorsal interval 83 microns, ventral length 68 microns, ventral width 44 microns, and ventral interval 88 microns. *Ocelli* borne on the usual prominence, 21-23 microns in diameter, the posterior pair 27-30 microns apart and 20-21 microns from median ocellus. *Antennae* (Fig. 1a) about 1.7 times as long as width of head across eyes, typical in general structure.

Prothorax typical in form and structure, about three-fourths the length of head, reticulate in the usual manner and with the reticles wrinkled; longest setae about 27 microns. *Pterothorax* normal. *Wings* typical, the fore pair 825-875 microns long and about 61 microns wide at middle, its costal margin with about 20 strong setae (those at middle of wing about 72 microns long) and about 25 fringing hairs; basal vein with a series of four setae, of which the apical one is stouter, nearly black, and situated at the fork very close to the first seta on anterior vein, this vein completely fused with ambient vein beyond fork (as usual) and with two slender setae in the apical dark band, the second of these darker brown; posterior vein with about eight setae, those near middle of wing about 51 microns long; all wing setae usually brown in the dark areas and invariably colourless in the light ones. *Legs* normal to the genus.

Abdomen of the usual form; terga I-VIII closely striate, rather than reticulate, the striae nearly transverse toward median line, nearly longitudinal toward sides, the narrow areas between them not all granulated or wrinkled¹; tergum IX nearly reticulate sub-basally and minutely asperate; seta I on segment IX about 63 microns, II 95 microns, III 61 microns; segment X with setae 50-53 microns.

Measurements of female (holotype), in mm.: Length about 1.11 (slightly distended, 1.13); head, total length 0.130, width across eyes 0.172, least width just behind eyes 0.166, greatest width across cheeks 0.172, least width near base 0.151, width of frontal costa 0.028; prothorax, median length of pronotum 0.098, width 0.200; mesothorax, greatest width 0.272; metathorax, width of posterior part 0.266; abdomen, greatest width (at segment IV) 0.318.

Antennal segments	. . .	1	2	3	4	5	6	7	8
Length (microns)	. . .	22	45	56	51	40	30	16	30
Width (microns)	. . .	26	23	27	26	20	18	8	6

Total length of antenna, 0.290 mm.

Male (macropterous).—Length about 0.9 mm. Colour somewhat paler than in female, with the yellow areas on legs larger; antennae and fore wings coloured as in female. Structure differing little from that of female, the abdomen similarly sculptured; sterna III-VII each with a transverse, arcuate, glandular area, that on IV about

1. Almost precisely as in *Hercothrips phaseoli* (see Hood, Psyche, 19 (4) 113, Pl. 8, fig. c, 1912)

63 microns x 5 microns; tergum IX with usual three pairs of strong thorn-like, brown setae in apical half, all arising from tubercles, the anterior pair 25-28 microns long, about 3.5 microns wide near base, and 16 microns apart, the second pair arising about 20 microns posteriorly, their length about 31 microns, width at base about 3 microns, interval 23 microns, the third pair paler and smaller (23 microns x 2 microns), arising 2-6 microns behind the second pair, and about 41 microns apart.

Measurements of male (allotype), in mm.: Length about 0.88 (slightly distended, 0.94); head, total length 0.113, width across eyes 0.148, least width just behind eyes 0.140, greatest width across cheeks 0.145, least width near base 0.118, width of frontal costa 0.021; eyes, dorsal length 0.069; median ocellus, diameter 0.018; posterior ocelli, diameter 0.020, interval 0.024, distance from median ocellus 0.018; prothorax, median length of pronotum 0.083, width 0.161; mesothorax, greatest width 0.216; fore wings, length 0.644; metathorax, width of posterior part 0.206; abdomen, greatest width (at segment III) 0.186.

Antennal segments	. . .	1	2	3	4	5	6	7	8
Length (microns)	. . . .	17	38	47	46	37	26	16	28
Width (microns)	. . . .	22	30	25	24	20	18	8	5

Total length of antenna, 0.255 mm.

Transvaal: Potgietersrust, May 8, 1920, 12 ♀♀ and 2 ♂♂, taken by Dr. J. C. Faure on *Helinus ovatus* E. Mey.

From the other species of the genus² which have the abdominal terga striate laterally and not wrinkled or granulated between the striae, and which also have the fore wings dark at their tip and with a subapical pale band, this species may be separated by the narrowness of the subapical cross-band, which is much less than one-half as broad as the dark band at the middle of the wings. From *Hercotrips impurus* (Priesner), comb. nov., which was described in *Heliothrips* before the present genus was erected, it is also separable by the differently proportioned and differently coloured antennal segments, the much broader head, and the presence of dark setae on the costa.

2. The following new synonymy is this genus is based in all instances upon the study of types:

- Hercotrips insularis* Hood, 1928 (Psyche, 34 (6): 234).—Synonym: *Heliothrips bruneri* Morgan, 1929 (Proc. Ent. Soc., Washington, 31 (1): 8).
Hercotrips marginipennis (Hood), 1912 (Proc. Ent. Soc., Washington, 14 (3): 136; referred to *Hercotrips* by Hood in 1928, Psyche, 34 (6): 233).—Synonym: *Heliothrips bishoppi* Moulton, 1929 (Bull. Brooklyn Ent. Soc., 24: 229).
Hercotrips phaseoli (Hood), 1912 (Psyche, 19 (4): 113, Pl. 8, figs. a-c; referred to *Hercotrips* by Hood in 1928, (Psyche 34 (6): 233).—Synonym: *Heliothrips gossypii* Moulton, 1927 (Pan-Pacific Ent., 4: 32).
Hercotrips braziliensis Morgan, 1929 (Proc. Ent. Soc., Washington, 31 (1): 7).—Synonym: *Hercotrips ipomoeae* Moulton, 1932 (Rev. d. Ent., 2 (4): 481).

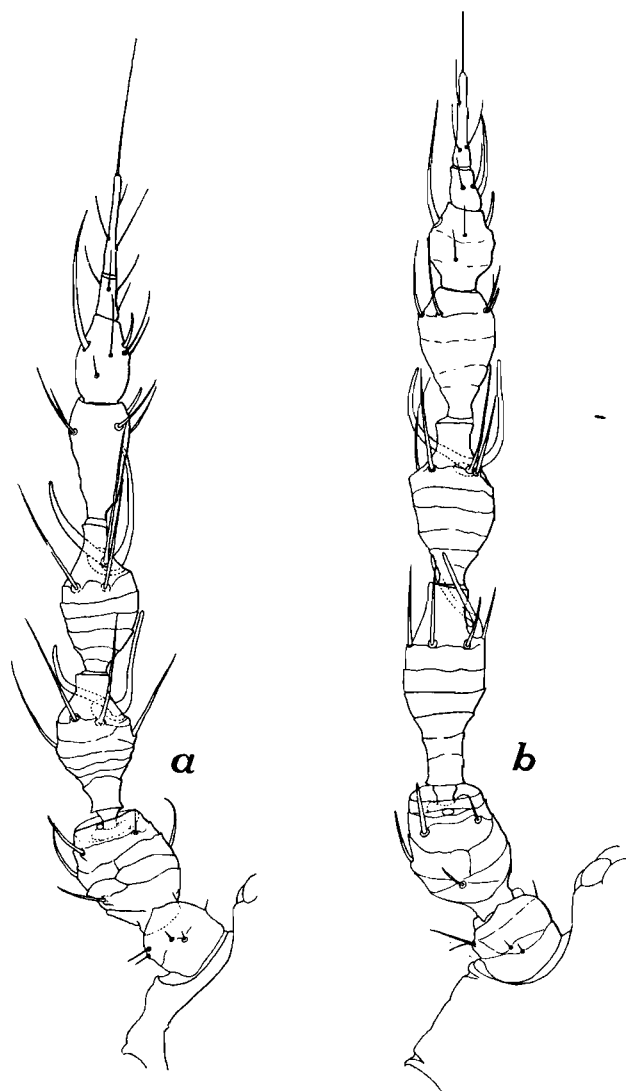


Fig. 1 a.—*Hercothrips helini*, sp. nov., ♀, paratype;
right antenna (microtrichia omitted).

b. *Hercinothrips brunneus*, sp. nov., ♀, holotype;
right antenna (microtrichia omitted).

Hercinothrips brunneus sp. nov. (Fig. 1b)

Female (macropterous).—Length about 1.5 mm. (fully distended, 1.7 mm.) *Unicolorous*, the head thorax and abdomen dark rich brown, without yellow areas; all femora brown, but paler than body and yellow at base and apex; all tibiae and tarsi yellow, the fore tibiae with a slight brown cloud at middle; fore wings pale, brown at extreme base, and with two brown cross-bands, the first of these broader, darker, occupying a little less than one-fifth the length of wing, and extending nearly to middle of wing, the second one occupying approximately its penultimate seventh; antennae nearly uniform yellow, segment II darkest and, like I, lightly shaded with brown laterally, VII and VIII shaded with gray.

Head (when strictly horizontal) about 1.5 times as wide as long, about as broad across eyes as across cheeks, the latter broadest at middle and curved evenly to eyes and to the basal flange, base of head with the usual neck-like constriction; dorsal surface with the same pattern of reticulation as in the other species of the genus, but with the lines of sculpture heavier and nearly black and the reticles themselves devoid of minute wrinkles. *Eyes* thoroughly typical, rounded, about 0.6 the length of head and half as wide as their interval, in one caustic-treated paratype with dorsal length 81 microns, dorsal width 52 microns, dorsal interval 104 microns, ventral length 66 microns, ventral width 49 microns, and ventral interval 109 microns. *Ocelli* borne on the usual prominence, 17-19 microns in diameter, the posterior pair about 39 microns apart and 27 microns from median ocellus. *Antennae* (Fig. 1b) 1.6 times as long as width of head across eyes, formed as in the genotype, but stouter and with the distal segments shorter, VIII scarcely six times as long as wide; segments III and IV with the forked trichome large and U-shaped, that on IV extending to or beyond the middle of V.

Prothorax typical in form and structure, shorter than head, much more than twice as wide as median length, with the usual deep transverse groove near posterior margin marked behind by a heavy sclerotized line; reticles not sharply defined, those at middle of pronotum evanescent; setae pale, stout, the largest about 19 microns long. *Pterothorax* normal; anterior sclerite of metanotum slightly elevated medially to form a poorly defined triangle whose posterior lateral margins are more heavily sculptured but which do not overhang; posterior sclerite more than four times as wide as long. *Wings* typical, about 966 microns long and 57 microns wide at middle; costal margin of fore pair in holotype with 25 strong setae (those at middle of wing only 40 microns long) and about 37 fringing hairs; anterior vein with a basal group of four setae followed by 13 or 14, those in apical portion of wing more widely spaced than the others; posterior vein with 13 or 14 setae; all wing setae brown in the dark areas of wing and pale yellowish in the light areas, those at middle

of wing, on the two veins, 42-46 microns long. *Legs* normal to the genus.

Abdomen of the usual form, its sculpture and chaetotaxy as in the genotype, tergum II with the usual dense vestiture of microtrichia arising from the lines of sculpture, III with this vestiture more sparse and confined to base; seta I on segment IX 93 microns long, II 107 microns, III 83 microns; seta I on X 80 microns, II 65 microns.

Measurements of female (holotype³), in mm.: Length about 1.53, fully distended 1.68; head, total length 0.140 (0.137), width across eyes 0.207 (0.207), across cheeks 0.204 (0.207), least width just behind eyes 0.197 (0.197), least width in front of subbasal flange 0.189 (0.192), width across flange 0.193 (0.195), least width at base 0.161 (0.162), width of frontal costa 0.042; prothorax, median length of pronotum 0.114 (0.120), greatest width 0.249 (0.251); mesothorax, width across anterior angles 0.291 (0.305), greatest width 0.325 (0.333); metathorax, width of posterior part 0.294; abdomen, greatest width (at segment IV) 0.386 (0.403).

Antennal segments	. . .	1	2	3	4	5	6	7	8
Length (microns)	. . .	27	50	74	57	43	31	15	34
Width (microns)	. . .	30	34	29	31	28	24	11	6

Total length of antenna, 0.331 mm.

Male (macropterous).—Length about 1.1 mm. (partially distended, 1.2 mm.). Colour of body nearly uniform dark brown (as in female), but with the intermediate abdominal segments somewhat paler; legs wholly yellow, or with the femora lightly brownish; antennae and wings not different in colour from those of female. Structure essentially as in female, but with the reticles of pronotum better defined; vestiture of abdomen as in female; tergum IX armed (as in the other species of the genus) with two pairs of strong, nearly black, thorn-like setae arising from approximate, elevated, dark tubercles, one pair directly behind and somewhat below the other, a smaller third pair lateral to these, behind them, and at a still lower level.

Measurements of male (allotype⁴), in mm.: Length about 1.06, slightly distended 1.17; head, total length 0.114, width across eyes 0.182 (0.178), least width just behind eyes 0.175, greatest width across cheeks 0.183, least width in front of subbasal flange 0.167, width across flange 0.171, least width at base 0.141, width of frontal costa 0.030; eyes, dorsal length 0.070 (0.079), dorsal width 0.044, dorsal interval 0.090; median ocellus, diameter 0.016; posterior ocelli, diameter 0.017, interval 0.029, distance from median ocellus 0.020;

3. Supplementary measurements of a caustic-treated paratype are given in parentheses.

4. Supplemented (in parentheses) by a few measurements of a caustic-treated paratype

prothorax, median length of pronotum 0.099, width 0.214; metathorax, width across anterior angles 0.248, greatest width 0.284; fore wings, length 0.802, width at middle 0.053; metathorax, width of posterior part 0.256; abdomen, greatest width 0.277.

Antennal segments	. . .	1	2	3	4	5	6	7	8
Length (microns)	. . .	23	43	72	54	40	26	14	34
Width (microns)	. . .	27	30	24	27	24	22	11	6
Total length of antenna, 0.306 mm.									

Transvaal: Woodbush, Pietersburg, April 18, 1924, 22 ♀♀ and 13 ♂♂, taken by Dr. J. C. Faure on *Maesa rufescens* A.DC.

This very distinct species has stouter antennae than its congeners, with the terminal segment about six times as long as wide, instead of seven or eight times. The uniform dark brown colour of the body, unvaried with the usual yellow found in the other species on the prothorax, and often on the head and pterothorax, as well, is thoroughly distinctive. The abdominal vestiture is nearly that of *femoralis*, the genotype; yet the wing pattern closely approximates that of the others species — those in which the abdominal microtrichia occur on the second to fourth terga, or on the second to sixth⁵.

Oswegatchie, N.Y., U.S.A.

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5. *Heliothrips errans* Williams (The Ent., 49: 243, 196) was referred by Bagnall (Ann. and Mag. Nat. Hist. (10) 10: 506, 1932), with some doubt, to *Hercinothrips*, where it has been retained by Priesner (Philippine Journ. of Sci., 57 (3): 351, 1935) and Takahashi (ibid., 60 (4): 428, 1936). It is a true *Helionothisrips*, however, and very closely related to the genotype, *H. brunneipennis* (Bagnall). It should therefore be known as *Helionothisrips errans* (Williams), comb. nov.